

Three clinical questions that may help medical providers screen for ovarian cancer (12):

1. Are you experiencing any of these symptoms?

- Abdominal pain, swelling, or bloating
- Gastrointestinal disturbances
- Urinary problems
- Fatigue/Malaise
- Change in appetite

2. How long have you been experiencing any of these symptoms?

3. How often each month do you experience each of these symptoms?

If the pattern of symptoms suggest multiple visceral disturbance episodes (12 or more per month) occurring over an extended period of time (3 or more months), then ovarian cancer should be considered, especially among postmenopausal women.

ACKNOWLEDGMENTS

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FOOTNOTES

- For more information go to <http://ucr.utah.edu> (801-581-8407) or www.ucan.cc (1-888-222-2542).

* Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Incidence - SEER 9 Regs Limited-Use, Nov 2006 Sub (1973-2004) - Linked To County Attributes - Total U.S., 1969-2004 Counties, National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, released April 2007, based on the November 2006 submission.

** Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Mortality - All COD, Public-Use With State, Total U.S. (1969-2004), National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, released April 2007. Underlying mortality data provided by NCHS (www.cdc.gov/nchs).

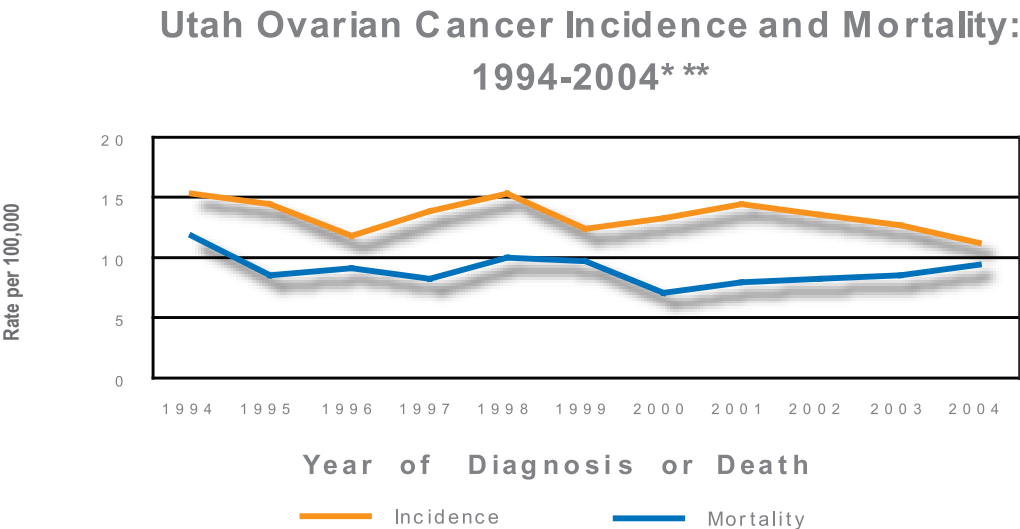
References 1-12 may be obtained at the Utah Cancer Registry or UCAN websites at: <http://ucr.utah.edu> or <http://health.utah.gov/ucan/cancer/Sitespecific/ovarian.htm>.



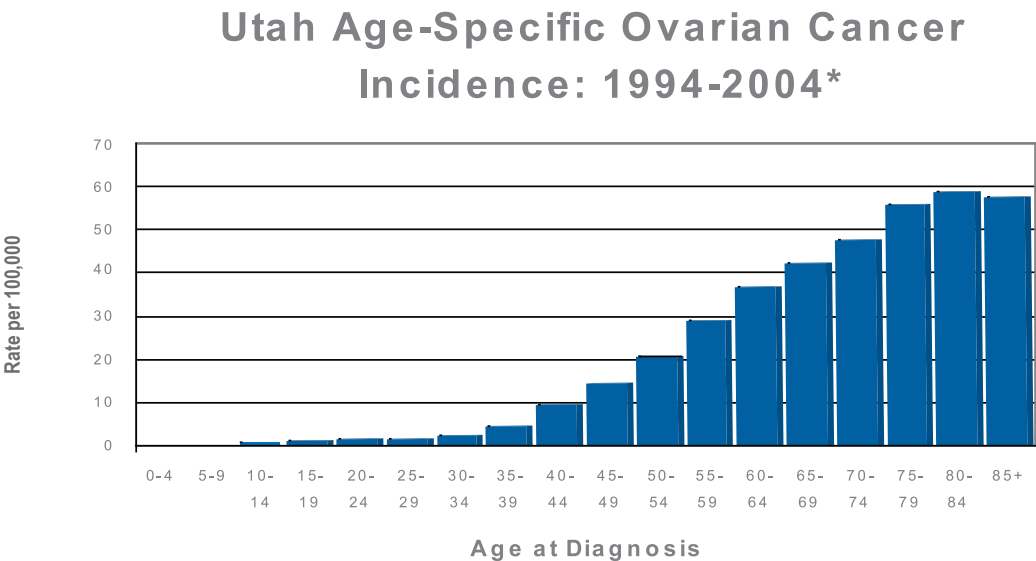
INCIDENCE AND MORTALITY

In Utah, invasive ovarian cancer ranked second among female genital cancers from 1994-2004, with an average annual incidence rate of 13.3 per 100,000. Approximately 825 women died from ovarian cancer from 1994-2004, making it the leading cause of female genital-related cancer death in Utah (8.9 deaths per 100,000).

The incidence and mortality of invasive ovarian cancer in Utah has not declined substantially from 1994-2004. Both had an average decrease of only 1.6% per year. The incidence of invasive ovarian cancer declined from 15.1 per 100,000 in 1994 to 11.0 per 100,000 in 2004, and mortality declined from 11.6 per 100,000 in 1994 to 9.4 per 100,000 in 2004.



Nearly 60% of invasive ovarian cancer cases in Utah are diagnosed in women aged 55 years and older, with an average annual incidence rate of 43.2 per 100,000. Incidence peaks around age 80-84 (58.9 per 100,000) and declines slightly among women age 85 and older (57.5 per 100,000). Ovarian cancer is extremely rare among women younger than 40, averaging only 1.6 cases per 100,000 from 1994-2004. Women aged 40-54 years have an average incidence rate of 14.5 per 100,000.

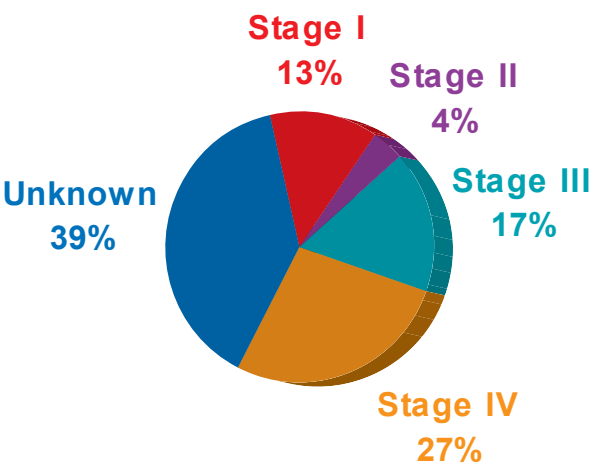


STAGING & SURVIVAL

Nearly one-third of Utah women with ovarian cancer are not diagnosed until Stage IV, when the cancer has metastasized, and 39% percent are never staged (unknown).

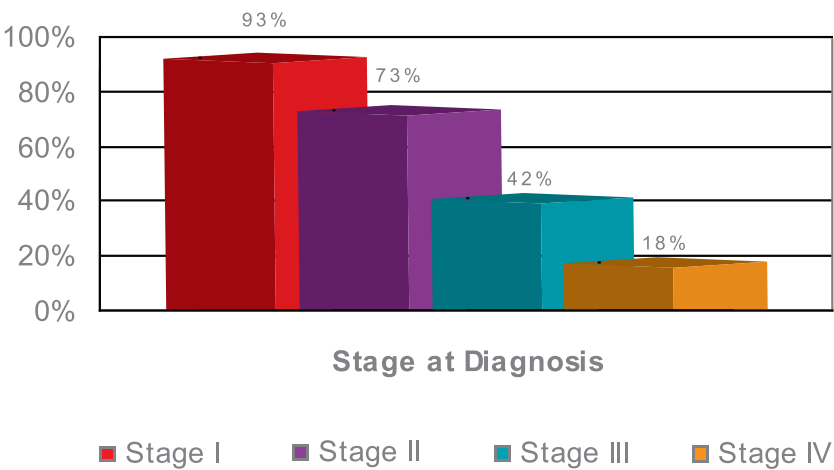
In Utah, the incidence of Stage IV disease has declined substantially since 1994, from 7.7 per 100,000 to 2.9 per 100,000 in 2003. At the same time, the incidence of Stage III disease increased from 0.4 per 100,000 to 3.9 per 100,000. Although the data suggest that more research is needed to improve earlier detection of ovarian cancer diagnoses, they may be an indicator of improved ovarian cancer surveillance in Utah.

Ovarian Cancer Distribution by AJCC Stage: Utah 1994-2003*



Stage of disease at diagnosis is crucial with regard to cancer survival because regional and/or distant cases are significantly less amenable to treatment. In Utah, women diagnosed with Stage IV ovarian cancer have a 5-year relative survival rate of only 18%, whereas women diagnosed at earlier stages have a 5-year relative survival rate of 93%, 73%, and 42% for Stages I, II, III, respectively.

5-Year Relative Survival of Ovarian Cancer by AJCC Stage: Utah 1994-2000*



RISK FACTORS AND SIGNS AND SYMPTOMS

Recent studies have pointed to several key factors associated with the risk (or prevention) of ovarian cancer, including:

- **Age** – Ovarian cancer risk increases with age, especially among postmenopausal women aged 55 and over (1).
- **Family History** – Family history of cancer, defined as one or more first or second degree relatives with ovarian, breast, or colorectal cancer, increases the risk for ovarian cancer in unaffected family members. Part of the hereditary component is associated with the BRCA1 and BRCA2 genetic mutations, which confer a 16% to 30% lifetime risk of developing ovarian cancer (the lifetime risk in the general population is 1.8%) (2-3).
- **Hormone Replacement Therapy (HRT)** – Although the literature is inconsistent, recent studies suggest that postmenopausal women on HRT, specifically estrogen-only formulas, are at a higher risk for developing ovarian cancer (2,4).
- **Parity** – Recent research has confirmed that women who have not given birth have a higher risk of ovarian cancer compared to women who have given birth to one or more children. Additionally, the risks decline further with each subsequent child (2-4).
- **Oral Contraceptives** – The use of oral contraceptives (OC) decreases the risk of ovarian cancer, and long term use enhances the protective effect. Some studies report that OCs confer protection for up to 20 years after use (2-4).
- **Tubal Ligation and Hysterectomy** – Ovarian cancer risks are lower among women who have had a tubal ligation or hysterectomy (2,4).
- **Diet, Obesity, and Smoking** – Several studies report that obesity, a diet high in fat, especially saturated fats, and a diet high in milk or dairy products increase the risks of ovarian cancer. Smoking doubles a woman’s risk of developing a specific type of ovarian cancer (mucinous). After quitting smoking, a woman’s risk returns to normal (3,5-8).

Ovarian cancer has been called a “silent killer”; however, several recent studies have found that only 7.2% of women with ovarian cancer are asymptomatic. Most often, these women present with symptoms commonly associated with irritable bowel syndrome (IBS). However, IBS is most common among women aged 30-50. Therefore, postmenopausal women with a relatively sudden onset (>12 times a month, for <3 months) of several of the following symptoms should lead to a consideration of ovarian cancer (9-11).

The key symptoms found to improve diagnosis at earlier stages are:

- Abdominal pain, swelling, or bloating
- Gastrointestinal disturbances
- Urinary problems
- Fatigue/Malaise
- Change in appetite
- Frequent symptomatic episodes (12+ times per month) and symptoms persist for 3+ months